SOCIAL SCIENCES

VOL. 3, No. 11

NOVEMBER 1949

PUBLIC LIBRARY
JAN 12 1950
DETROIT

CHRONICLE OF THE WORLD HEALTH ORGANIZATION

FOURTH SESSION OF THE EXECUTIVE BOARD

IMPROVEMENT OF MEDICAL STATISTICS

TUBERCULOSIS

MALARIA

BIOLOGICAL UNIT OF ACTIVITY

THE TUBERCLE BACILLUS

WORLD HEALTH ORGANIZATION

PALAIS DES NATIONS

GENEVA

CONTENTS

	Page
Fourth Session of the Executive Board	237
Improvement of medical statistics : first session of the Expert Committee on Health Statistics	246
Tuberculosis : fourth session of the expert committee	252
Malaria	256
Biological unit of activity : its status and scope	264
The tubercle bacillus	266

Notes and News

WHO survey on endemic goitre	267
World Health Day	267
Seminar on World Health	268

Note. — The *Chronicle of the World Health Organization* is published monthly in English, French, Spanish, Chinese and Russian. The *Chronicle* reports the activities of the Organization, without, however, claiming to be an authoritative record of its official views, which are set out in the *Official Records of the World Health Organization*. All correspondence relating to it should be addressed to the World Health Organization, Palais des Nations, Geneva. Those who may wish to reproduce the text of the *Chronicle* or extracts therefrom, more especially in the medical Press, are entirely at liberty to do so.

VOL. 3, No. 11 NOVEMBER 1949

CHRONICLE OF THE WORLD HEALTH ORGANIZATION

FOURTH SESSION OF THE EXECUTIVE BOARD

Measures aiming to ensure the optimum efficiency of the World Health Organization and to facilitate the work of the next World Health Assembly in its consideration of the programme and budget for 1951 were among those on which decisions were taken by the Executive Board at its fourth session, held in Geneva from 8 to 19 July 1949.[1]

While much of the session was devoted to administrative and budgetary matters, the Board also took a number of decisions on questions of wider significance. Into the latter category fall the projected establishment of a system of common nomenclature for drugs sold internationally ; participation in the development of co-ordinated planning to promote the health and welfare of children ; a project for UNICEF/WHO assistance in the establishment by the French Government of a children's centre in Paris ; and plans for combating the threat to health due to the spread of venereal infections by boat traffic in the Rhine area.

Fifteen members, seven of them new, attended the session. The fact that one of the new members, Professor de Laët, a Belgian, had been designated by a country (the Netherlands) of which he is not a national, provided an interesting illustration of the principle that members sit on the Board as representatives of the Health Assembly as a whole and not of their individual countries.

Sir Arcot L. Mudaliar was elected Chairman, in succession to Sir Aly Tewfik Shousha, Pasha, who has been appointed Director of the WHO Regional Office for the Eastern Mediterranean. Dr J. Zozaya and Dr H. S. Gear were elected Vice-Chairmen.

Observers were sent by the United Nations, the Economic Commission for Europe (ECE), the International Labour Organization (ILO), the

[1] The official report on the fourth session of the Executive Board will be published as *Off. Rec. World Hlth Org.* 22. For list of members see p. 245.

International Refugee Organization (IRO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Office International d'Hygiène Publique (OIHP), and the Pan American Sanitary Organization (PASO). The World Medical Association, a non-governmental organization, also sent an observer.

So as to avoid certain procedural difficulties that had developed during the consideration of the programme and budget for 1950, the Executive Board set up a Standing Committee on Administration and Finance, which will meet in January 1950 about a week before the fifth session of the Board for the purpose of reviewing the budget estimates for 1951. The same committee will examine the organizational structure of WHO, in accordance with a request made to the Board by the Second Health Assembly. The committee held one meeting during the session of the Board. A report will be made to the next Health Assembly for its guidance in establishing the general lines of organizational policy.

New Drugs — Need for a Common Nomenclature

Acting on a report by the Expert Committee on the Unification of Pharmacopoeias, the Board requested the Director-General to study the questions involved in the establishment of a system of common nomenclature for new pharmaceutical products sold internationally.

This project is something new on the international plane. The question of a common nomenclature for pharmaceutical products has already been studied by individual nations but any solution has been found difficult because of the number and variety of interests involved. It has, however, become increasingly pressing as a result of the development of the pharmaceutical industry and the ever-growing number of special products appearing on the market. In many cases, drugs with the same composition carry entirely different names as a result of having been produced in different countries or by different firms. Not only are the same products offered under a variety of trade names, but the non-proprietary names by which they are commonly designated are not always the same.

In recent years, scientific conferences and groups have experienced in their discussions the drawbacks of this situation and have emphasized them on several occasions. Complaints and criticisms have likewise been made by travellers who, because of the diverse names given to pharmaceutical products, have been finding it increasingly difficult, when abroad, to obtain a particular article. Hence there are practical as well as scientific reasons for the development of a more uniform system.

The Expert Committee on Habit-forming Drugs, which found that its discussions were hampered by the multiplicity of names under which the same substances were known, had already requested WHO to study the establishment of a system of common nomenclature for internationally

recognized habit-forming drugs.[2] The recommendation of the Expert Committee on the Unification of Pharmacopoeias followed the same lines but embraced all drugs likely to be listed in the forthcoming International Pharmacopoeia.[3]

The Director-General will report on the subject to the sixth session of the Executive Board.

Project for Continuing Aid to Children

The need for co-ordinated long-term programmes for the improvement of the nutrition, health, and welfare of children in many parts of the world is recognized in another decision of the Board.

FIG. 1. FOURTH SESSION OF THE EXECUTIVE BOARD

The Executive Board of UNICEF, in a resolution on this subject, had suggested that a study of the continuing needs of children should be made through the co-operation of the Secretary-General of the United Nations, the Social Commission, and interested specialized agencies.

It is proposed, therefore, that the Administrative Committee on Co-ordination should be asked to set up an ad hoc committee composed of the Secretary-General of the United Nations and the Directors-General of FAO, ILO, UNESCO, and WHO, or their representatives.

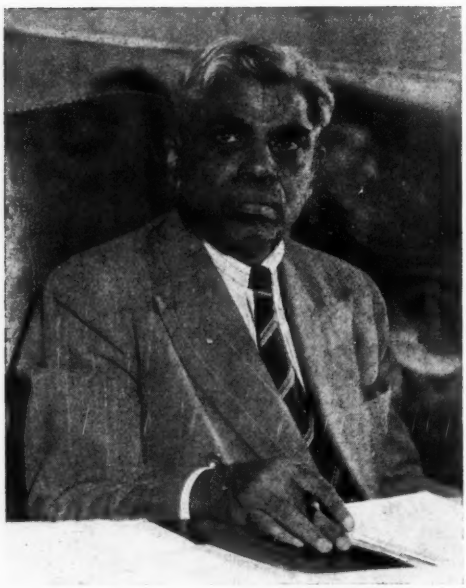
---

[2] *Off. Rec. World Hlth Org.* **19**, 32

[3] The full report of this committee will be published shortly ; see also *Chron. World Hlth Org.* 1949, **3**, 122.

The ad hoc committee would explore and recommend ways and means of focusing the attention of the United Nations on the needs of children, through joint action with the specialized agencies; of determining the needs of children on a current and continuing basis; and of meeting them through national and international action. The development of co-ordinated planning to ensure a maximum effort by specialized agencies toward assisting governments in their programmes on behalf of children would be studied, and the committee would also consider ways of stimulating national and international research involving sociological, psychological, educational, anthropological, and medical approaches. It would report on its conclusions with specific recommendations on the above-mentioned points and on the means whereby a continuing interagency mechanism might be provided for their accomplishment.

FIG. 2. SIR ARCOT L. MUDALIAR, CHAIRMAN OF THE EXECUTIVE BOARD



International Children's Centre

Closely allied to the foregoing decision is one, approved in principle by the Board, that WHO should assist, jointly with UNICEF, in the establishment by the French Government of a children's centre in Paris. The centre would be used for research and training by UNICEF, the United Nations, organizations specially concerned with child welfare, and governments. It would be administered by the French Government and would open to workers in child health and welfare the possibility of a first-class technical and medical training adapted to the needs of the various countries, thereby meeting a need which has become in recent years increasingly insistent.

The immediate programme would have as its basis much of the work already undertaken by UNICEF and would include the following activities :

(*a*) training courses in child care and child development for physicians, nurses, social workers and administrators ;

(*b*) such laboratory research on BCG, or similar subjects related to children, as WHO may desire to have carried out under its direction ;

(*c*) investigations in child nutrition, including experimental demonstrations, carried out under policies developed by, and with the technical advice of, WHO, FAO, and UNICEF ;

(*d*) studies of the health, educational, and social problems of children suffering from the effects of war, carried out under policies developed by, and with the technical advice of, the United Nations, UNESCO, WHO, and UNICEF.

The decision of the Executive Board envisages assistance by WHO for a period of not more than three years. The Organization could give assistance of the following types :

(*a*) group or individual international fellowships to physicians, nurses, medical and psychiatric social workers, maternal and child-health administrators, hospital administrators, hospital architects, etc., to study various aspects of child health and welfare and social paediatrics ;

(*b*) facilitating special international group fellowships for teams of health and welfare workers engaged in meeting special needs of children, as for example, the team of doctor, nurse, physical therapist, psychologist, social worker, etc., who together work to restore and rehabilitate crippled or otherwise handicapped children, or teams of doctor and nurse to study the care of premature infants ;

(*c*) provision of experts to assist in teaching and research activities ;

(*d*) advice of expert committees ;

(*e*) advisory service on organization of demonstration child-health programmes to serve as field experience centres.

Anti-Venereal-Disease Commission of the Rhine

The part to be played by WHO in the co-ordination of venereal-disease control in the Rhine area was discussed by the Board on the basis of the report and recommendations of the preparatory meeting on the subject held from 30 May to 1 June 1949 in Geneva.[4] At that meeting, attended by representatives of Belgium, France, Germany, the Netherlands, and Switzerland, a programme was discussed for the establishment of a commission. In authorizing the necessary assistance to the countries concerned,

[4] *Chron. World Hlth Org.* 1949, 3, 117

the Board made it clear that the body envisaged was not an expert committee nor a regional committee, but a special local commission to co-ordinate venereal-disease measures among countries bordering the Rhine.

Malaria : Scope of the Expert Committee

The Second Health Assembly had referred to the Executive Board a proposal by the Italian delegation for the transformation of the Expert Committee on Malaria into an expert committee on malaria and other insect-borne diseases.[5] In the discussion on this proposal, some members of the Board feared that the expert nature of the existing committee would be impaired if the consideration of all insect-borne diseases were brought within its scope.

The Board finally endorsed Dr M. Mackenzie's view that it was not desirable at the present time to make the proposed change in the committee.

Tuberculosis Officers and Consultants

In a paper submitted to the Second Health Assembly, the delegations of Czechoslovakia, Denmark, Finland, and India had suggested, inter alia, that the services of the temporary consultants in tuberculosis should be limited to a minimum and that a full-time WHO tuberculosis officer should be employed in each regional office.[6]

The proposal had led to an interesting discussion in the Committee on Programme on the relative emphasis to be placed on temporary consultants as against full-time regional staff officers, the question being finally referred to the Executive Board.

The view of the Board was that the matter was one which could be decided by the Director-General, in each instance, in the light of the individual circumstances. It referred to him, for his consideration in developing the programme for advisory demonstration services to governments, the relevant recommendations contained in the note submitted to the Health Assembly by the delegations concerned.

Approval of the Institut Pasteur Yellow-Fever Vaccine

The Board approved for international use the yellow-fever vaccine produced by the Institut Pasteur, Paris. On application to WHO by the Director of the Institut Pasteur, the vaccine had been tested by three recognized control laboratories, in accordance with the required procedure in such cases. The results of potency titration showed that the vaccine in its recommended dosage had a content much in excess of the 500 minimum

---

[5] *Chron. World Hlth Org.* 1949, 3, 186
[6] *Chron. World Hlth Org.* 1949, 3, 190

lethal doses (m.l.d.) laid down for the satisfactory immunization of man in the standards for the manufacture and control of yellow-fever vaccine, but an excess which is recommended in those standards.[7] All members of the Yellow-Fever Panel of WHO concerned with the laboratory evaluation of yellow-fever vaccine, to whom the results were communicated, considered the vaccine to be in every way suitable for international use and recommended its approval by WHO.

Epidemiological Broadcasts

Owing to the favourable response of health administrations to the daily service of epidemiological broadcasts from Geneva, which were begun last January on a trial basis,[8] the Board placed this system on a permanent basis.

The Board was informed that reception generally had been good, except in the central part of South America and in central Africa. To remedy these defects, arrangements had been made with the Brazilian and French Governments for the relay of the broadcasts.

Regional Organization for Europe

The Second Health Assembly had authorized the Board to establish a regional organization for Europe as soon as the consent of the majority of Member States in Europe had been obtained.[9]

The Board authorized the Director-General to establish the regional organization on fulfilment of the necessary conditions and took other decisions providing for the expeditious establishment of the site and the appointment of the regional director.

Deontology : Establishment of an International Code

The Board expressed satisfaction with the steps taken by the World Medical Association with a view to the establishment of an international code of deontology in connexion with the practice of medicine. It asked the Director-General to keep in close touch with this work and to bring the matter to the attention of the International Council of Nurses.

The final draft of the code as submitted by the Executive Board of the World Medical Association to 40 national medical associations will be considered in October by the Annual General Assembly of the World Medical Association.

A further report will be submitted to the next session of the Executive Board.

---

[7] See *Epidem. Inform. Bull.* 1945, **1**, 365.
[8] *Chron. World Hlth Org.* 1949, **3**, 35, 92
[9] *Chron. World Hlth Org.* 1949, **3**, 212

Health Statistics

The Board implemented a request of the Second Health Assembly by deciding to establish as from 1 January 1950 three small sub-committees of the Expert Committee on Health Statistics.[10] One, of a temporary nature, will study the definition of stillbirth and abortion. Another will determine the proper action to be taken by the committee on hospital statistics, giving primary attention to the application of the new *International Statistical Classification of Diseases, Injuries, and Causes of Death*,[11] and related subjects. The study of problems concerning the registration of cases of cancer, as well as their statistical presentation, was allotted to the third sub-committee.

Requests for Relationship with WHO

By another decision of the Board, the Council for the Co-ordination of International Congresses of Medical Sciences was brought into official relationship with WHO on the basis of the principles laid down by the First World Health Assembly. The Board took a similar decision with regard to the Biometric Society but postponed consideration of requests from a number of other non-governmental organizations until its next session.

Headquarters Accommodation

The Second Health Assembly had referred to the Executive Board the decision on accommodation for the headquarters office at Geneva, in view of the fact that the plans submitted were not sufficiently developed to enable the delegates to take a decision.[12]

Since then, an entirely new plan has been drawn up by M. J. Carlu, an architect consulted by the Secretary-General of the United Nations. This envisages various enlargements of the Palais des Nations which would provide for more than 300 new offices, a figure above that of present needs, and, at the same time, satisfies the various conditions laid down, on the one hand by the United Nations, and on the other by the Swiss Government and the Government of the Canton of Geneva. The Executive Board accordingly approved it, subject to the agreement of the Secretary-General, and subsequently of the General Assembly, of the United Nations. The cost of these alterations is estimated at about 4,688,000 Swiss francs. The Swiss Federal Council expects to make a financial contribution to the building.

---

[10] *Chron. World Hlth Org.* 1949, 3, 199 ; see also p. 251.

[11] Supplement 1 to *Bull. World Hlth Org.* 1948-1949, 2 vols. This may be obtained from the World Health Organization, Sales Section, Palais des Nations, Geneva, at the price of $6.00 or 30/-, post-free. Volume 1 is already available ; volume 2 (alphabetical index) will be available shortly.

[12] *Chron. World Hlth Org.* 1949, 3, 214

MEMBERSHIP OF THE EXECUTIVE BOARD

The designating country is given in brackets after each member's name. New members are indicated by an asterisk (*).

* Dr V. J. Babecki, Inspector, Ministry of Health, Warsaw (Poland)

Dr H. S. Gear, Deputy Chief Health Officer for the Union of South Africa, Cape Town (Union of South Africa) (*Vice-Chairman*)

* Dr J. A. Höjer, Director-General of Public Health, Stockholm (Sweden)

Dr H. van Zile Hyde, Medical Director, US Public Health Service, Federal Security Agency, Washington, D.C. (United States of America)

* Dr M. de Laët, Secrétaire général du Ministère de la Santé publique et de la Famille, Brussels (Netherlands)

Dr M. Mackenzie, Principal Medical Officer, Ministry of Health, London (United Kingdom)

Sir Arcot L. Mudaliar, Vice-Chancellor, University of Madras (India) (*Chairman*)

* Dr M. Nazif Bey, Assistant Under-Secretary of State, Ministry of Public Health, Cairo (Egypt)

Dr J. Parisot, Professeur d'Hygiène et de Médecine sociale à l'Université de Nancy (France)

Dr G. H. de Paula Souza, Director and Professor, Faculty of Hygiene and Public Health, University of São Paulo (Brazil)

Dr A. Stampar, President of the Yugoslav Academy of Sciences and Arts ; Professor of Public Health and Social Medicine, University of Zagreb (Yugoslavia)

* Dr E. Tejera, Former Minister of Health and Social Welfare, Professor of Tropical Pathology, Caracas (Venezuela)

* Dr E. Tok, Under-Secretary of State, Ministry of Health and Social Assistance, Ankara (Turkey)

* Dr A. Villarama, Secretary (Minister) of Health, Manila (Philippine Republic)

Dr J. Zozaya, Technical Adviser, Ministry of Health and Welfare, Mexico City (Mexico) (*Vice-Chairman*)

The following members were absent :

Dr N. Evstafiev, Deputy Minister of Public Health, Minsk (Byelorussian Soviet Socialist Republic)

Dr N. A. Vinogradov, Deputy Minister of Public Health, Moscow (Union of Soviet Socialist Republics)

The Chinese Government has not yet designated a person to replace Dr W. W. Yung, former Member of the Board.

IMPROVEMENT OF MEDICAL STATISTICS

First Session of the Expert Committee on Health Statistics

The newly established WHO Expert Committee on Health Statistics, at its first session, held in Geneva from 23 to 28 May 1949,[1] instituted further measures which it is hoped will result in the improvement of international health statistics. Most of the time was devoted to the discussion of problems connected with the international comparability of health statistics.

National Committees on Health Statistics

The International Conference for the Sixth Decennial Revision of the International Lists of Diseases and Causes of Death, held in Paris in April 1948,[2] had realized that, to be truly effective, action in medical statistics had to be conducted on both the international and the national planes. This principle was later endorsed by the First World Health Assembly,[3] and it had therefore been recommended that all governments should establish national committees on vital and health statistics to study certain special problems, such as medical certification, cancer registration, and statistics of malaria morbidity.

The committee had before it evidence that, in several countries, including France, the USA and the United Kingdom, national committees had been

---

[1] The following took part in this session :

Members :

Dr D. Curiel, Chief, Division of Epidemiology and Vital Statistics, Ministry of Health and Social Welfare, Caracas, Venezuela
Dr P. F. Denoix, Chef des Services techniques et de la Section du Cancer, Institut national d'Hygiène, Paris, France
Dr H. L. Dunn, Chief, National Office of Vital Statistics (US Public Health Service), Washington, D.C., USA
Dr M. Kacprzak, Professor of Hygiene, Director, State School of Hygiene, Warsaw, Poland (*Chairman*)
Dr P. Stocks, Chief Medical Statistician, General Register Office of England and Wales, London, United Kingdom

Co-opted Members :

Julia E. Backer, Sc.D., Chief, Demographic Section, Central Statistical Office, Oslo, Norway
Professeur L. Hersch, Professeur de Démographie à l'Université de Genève, Switzerland
Professor J. Rasuhin, Professor of Social Medicine, University of Zagreb, Yugoslavia

Representatives of specialized agencies :

FAO :
Dr J. Latsky, Nutrition Representative in Europe

ILO :
Miss L. E. Bodmer, Social Security Section
Dr A. Grut, Chief, Industrial Hygiene Section
Dr M. de Viado, Social Security Section

Secretary :

Dr M. Pascua, Chief, Health Statistics Section, WHO

The following were invited to attend as co-opted members, but declined :

Professor M. Greenwood, F.R.S., Professor Emeritus of Epidemiology and Vital Statistics, London School of Hygiene and Tropical Medicine, United Kingdom
Professor J. Reed, Chairman, US National Committee on Vital and Health Statistics ; Department of Biostatistics, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md., USA

Professor J. Heyman, Radiumhemmet, Stockholm, assisted at the discussion on cancer statistics.

[2] *Chron. World Hlth Org.* 1948, **2**, 109

[3] *Off. Rec. World Hlth Org.* **13**, 304

established in recent months. This development was welcomed, not only because of the importance which it has in itself, but also because it is certain to have a direct bearing on the work of the WHO committee : the national committees are expected to report their findings and recommendations, from time to time, to the WHO committee, "for international consideration, clearance of national viewpoints, and co-ordination with the interested statistical services of other inter-governmental organizations".[4]

FIG. 3. EXPERT COMMITTEE ON HEALTH STATISTICS, FIRST SESSION - I

Left to right (seated round table) : Dr Marie Cakrtova (WHO) ; Miss L. E. Bodmer ; Dr D. Curiel ; Dr P. F. Denoix ; Dr P. Stocks ; Miss J. E. Backer ; Dr M. Pascua (WHO) ; Dr M. Kacprzak (Chairman) ; B. Grab (WHO) ; Professor J. Rasuhin ; Professeur L. Hersch ; Dr H. L. Dunn

Now that several countries had carried out the recommendation to establish national committees, the committee felt that WHO should renew its efforts to encourage their formation in other countries. The Secretariat was therefore requested to issue a document setting forth the reasons for the establishment of national committees, emphasizing their aims, suggesting problems which might need solution, and reporting on the present status of those national committees already organized.[5] The committee made two further recommendations which have been approved in principle by the Second World Health Assembly,[6] held in Rome in June 1949, but which cannot be carried out until the necessary financial arrangements have been made. One of these was that a special unit, with adequate funds for travel and other expenses involved in direct assistance to national

[4] *Off. Rec. World Hlth Org.* **11**, 30 ; see also *Chron. World Hlth Org.* 1948, **2**, 115.

[5] Information concerning the establishment of the national committees in various countries will be given in forthcoming numbers of the *Chronicle*.

[6] *Off. Rec. World Hlth Org.* **21**, 28

committees, should be set up in the Secretariat to report on the work of national committees and to supply information which might be of value to them. The other proposal was that WHO should initiate an international conference early in 1952 of representatives of national committees to be sent, at the expense of their own governments, to discuss such problems as can best be solved by international co-operation.

Means of Improving National Statistics

Some time was devoted by the committee to a discussion of the actual means of improving national statistics.

It was agreed that the attention of governments should be drawn to the desirability of compiling statistics of infectious diseases on a weekly basis rather than by periods of 10 days or a month, as the latter methods do not allow of comparisons, and therefore defeat the purpose of the accumulated data.

Countries should also be asked to give an estimate of completeness of their mortality figures and of the proportion of deaths the causes of which were adequately certified by physicians. Such information is indispensable as, in many cases, the lack of physicians and proper administrative machinery often results in death certificates being signed by others than medical men or qualified officers. Under these circumstances, some certificates are bound to carry incorrect diagnoses, and it would be of great value if an approximate estimate of their proportion were available.

Another suggestion was that countries unable to provide satisfactory statistics for the whole of their territory should supply figures for those towns or areas in which reliable statistics can be compiled. Each country would be requested to indicate the estimated degree of incompleteness of the notifications referring to each of the main communicable diseases.

Finally, the committee expressed the view that the publication of mortality-rates for separate causes, such as cancer, without reference to age or sex, did not give a true picture. It therefore recommended " that WHO publish regularly, if not necessarily every year, figures of mortality by age and sex for the more important diseases, together with corresponding population figures, for countries selected for the accuracy of their statistics ".[7]

Comparability of International Statistics

Turning to international statistics, and more specifically to the vexed problem of their comparability, the expert committee began by making a brief survey of the adequacy of the present epidemiological statistical

[7] The report of the committee from which this and other extracts appearing in this article are taken will be published shortly.

publications of WHO. It was agreed that there was a need for three periodicals :

(1) a weekly, containing data on pestilential diseases, for quarantine purposes (*Weekly Epidemiological Record*) ;

(2) a monthly, containing provisional data on communicable diseases and vital statistics, for the current general information of health administrations (*Epidemiological and Vital Statistics Report*) ; and

(3) an annual volume of corrected and completed figures on the same subject as in (2), for reference and research.[8]

The view of the committee was fully shared by the Second World Health Assembly, and WHO will, therefore, continue to publish the three periodicals.

The committee next discussed the inadequacy of the health statistics now published and the immediate possibilities of obtaining further data. It was fully aware that " the unequal degree of development of the medical and statistical services throughout the world did not always permit of the collection and publication of reliable and therefore comparable health statistics ". Superficially, this may seem to lead to the rather negative conclusion that the collection of statistics should be limited to a few countries. The committee dissented, however, from any such view and emphasized that in its opinion " the international publication of such statistics was of value not only to show the seasonal variation and trend of diseases within the countries, but as a stimulant to improvement ".

Classification of available statistical data, according to the rules adopted by the First World Health Assembly and published recently as the *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death* (*Bulletin of the World Health Organization*, Supplement 1), should result in improved statistics. There was evidence, however, that the application of the *Manual* was not sufficiently understood in every case, and the committee therefore recommended that WHO should prepare a short booklet elaborating and illustrating the provisions already made in the *Manual*. This recommendation was approved by the Second World Health Assembly, and, provided suitable financial arrangements can be made, the booklet will be supplemented by a clearing centre to be set up within the Secretariat to deal with problems arising in the application of the *Manual*.

WHO is expected to stimulate the exchange of information between health administrations with regard to the improvement of medical certification, the application of the *Manual*, and the training of personnel responsible for statistical work.

---

[8] From 1922 to 1938 the Health Organization of the League of Nations published an *Annual Epidemiological Report* (containing statistics of notifiable diseases), although this title did not appear on each number until 1932. A volume consolidating the figures for 1939 to 1946 is now in preparation, and will be entitled *Annual Epidemiological and Vital Statistics, 1939-1946*. This will be followed by a volume covering the years 1947 and 1948, after which it is planned to resume annual publication.

Health Statistics in Underdeveloped Areas

It is well known that the proper assessment of health in underdeveloped areas is difficult. The committee considered the present obstacles and discussed the need for evaluating the effectiveness of projects to improve health and nutrition in such countries. At the recommendation of the committee, studies will be carried out, in underdeveloped areas, of available methods of measuring the state of health of populations and the prevalence of diseases. These studies will aim at the improvement of the present methods of work and will probably be initiated by conferences, within the region concerned, in which local specialists and one or more members of the WHO Secretariat will participate. The Second World Health Assembly approved in principle the convening of three such conferences to be financed by a sum of money from the supplemental budget. The committee also considered it desirable that " when projects aiming to improve health conditions of underdeveloped areas are initiated, proper arrangements be made in advance by the competent statistical advisory committees of the international agencies concerned to collect such vital statistics as may be possible throughout the period of the work, with a view to assessing the improvement in health which actually results from carrying out the projects ".

FIG. 4. EXPERT COMMITTEE ON HEALTH STATISTICS, FIRST SESSION - II

Left to right : Dr M. Pascua (WHO) ; Dr M. Kacprzak (Chairman) ; B. Grab (WHO)

Teaching of Health Statistics

One of the most urgent problems before the committee was that of the training of health-statistics personnel and the teaching of health statistics. The responsibility of indicating on the death certificates the underlying cause of death, i.e., the disease or injury which initiated the sequence of morbid events leading to death, is placed on the physician ; and, unless he is fully aware of what is expected of him, the statistical data collected are bound to remain of doubtful value. The number of medically qualified statisticians is notoriously small ; most medical men lack elementary

knowledge of statistical methods to such an extent that Professor M. Greenwood felt it necessary to warn the committee that " there is a great danger that the medical officer, the doctor of medicine, will either despise the ' mere mathematician ' who knows nothing of smallpox but its name, or over-estimate the value of conclusions supported by mathematical arguments on the principle, *omne ignotum pro magnifico* ".

The committee devoted a great deal of time to this subject, and it was finally agreed to emphasize the importance of the teaching of medical recording procedure and elementary statistical methodology to all medical students, preferably in the second and third years of their training. The committee also advocated the teaching of more advanced statistical methodology and vital statistics to medical and other graduates who are training for public-health posts. Instruction in the background of medical statistics should be systematically given to non-medical persons engaged in medical coding, the keeping of records, and preparing statistics in public-health offices, hospitals, and social-security institutions.

With the adoption of these recommendations, an important step was made in the direction of improved medical statistics. It now rests with the universities in various countries to consider the proposals of the WHO committee and to carry them out.

New Statistical Studies

A recommendation by the committee, which was approved by the Second World Health Assembly, and which may have far-reaching consequences, was that new international bodies should be established to study (*a*) cancer statistics, (*b*) hospital statistics, and (*c*) definition of stillbirth and abortion. It has long been recognized that neither the cancer statistics nor the hospital statistics of the various countries are entirely satisfactory. Furthermore, it is urgently necessary to fix the limits between live birth and stillbirth, and between stillbirth and abortion, in order to obtain an international definition of stillbirth.[9] Three expert sub-committees will be set up to study these problems and report to the Expert Committee on Health Statistics. The sub-committee entrusted with the study of cancer statistics is also expected to investigate the question of the modifications to be made in the presentation of possible future editions of the *Annual Report on the Results of Radiotherapy in Cancer of the Uterine Cervix*.[10] The fifth volume was recently published in Stockholm under the joint auspices of the British Empire Cancer Campaign, London ; the Donner Foundation, Philadelphia ; the Cancerföreningen, Stockholm ; and the World Health Organization.

---

[9] See : Pascua, M. (1948) *Epidem. vital Stat. Rep.* **1**, 210

[10] *Chron. World Hlth Org.* 1948, **2**, 32

TUBERCULOSIS

Fourth Session of the Expert Committee [1]

Among the subjects considered by the Expert Committee on Tuberculosis at the fourth session, held in Copenhagen from 26 to 30 July 1949,[2] were : the training of specialized personnel, the construction of hospital establishments for the treatment of the tuberculous, co-ordination of the work of the international organizations concerned with tuberculosis control, and the report of the WHO Research Office on Tuberculosis, at Copenhagen.

Training of Personnel

An intensive campaign against tuberculosis necessitates a specialized staff composed of physicians, nurses, and laboratory and X-ray technicians. However, in most countries the number of such staff is inadequate. In certain cases, the success of tuberculosis control is even endangered by this lack of qualified personnel, despite the best intentions of the governments concerned. Thus, the committee felt that WHO should collaborate in the setting-up of permanent centres for the training of personnel in all branches of anti-tuberculosis work. Doctors, nurses, and technicians should, as far as possible, be trained in the same regional centre, which should therefore possess a dispensary, a laboratory, an epidemiological division, a mobile X-ray unit, and treatment facilities. One or more of these centres should be set up in each WHO region, i.e., the group of territories making up a regional organization. Furthermore, WHO could contribute to the efficient working of these centres, on the one hand by seconding instructors and, on the other hand, by awarding fellowships to the trainees. The committee considered that the fellowships awarded should be used mainly

---

[1] The complete text of the report on the fourth session of the Expert Committee on Tuberculosis will be published after approval by the Executive Board.

[2] This session was the first of the enlarged committee, which will consist of nine members (the ninth member has not yet been appointed). The following took part in these meetings :

Members :

Dr M. S. Abaza Bey, Adviser, Misr Weaving & Spinning Co., Cairo, Egypt
Dr J. I. Baldó, Chief, Tuberculosis Division, Ministry of Public Health, Caracas, Venezuela
Dr P. V. Benjamin, Tuberculosis Adviser, Directorate General of Health Services, New Delhi, India
Dr E. Bernard, Professeur à la Faculté de Médecine de l'Université de Paris, France (*Vice-Chairman*)
Dr I. Gonda, Chief, Tuberculosis Control Division, Department of Public Health for Slovakia, Bratislava, Czechoslovakia
Dr P. M. D'Arcy Hart, Director, Tuberculosis Research Unit, National Institute for Medical Research (Medical Research Council), London, United Kingdom (*Rapporteur*)
Dr H. E. Hilleboe, Commissioner of Health, New York State Department of Health, Albany, N.Y., USA
Dr J. H. Holm, Chief, Tuberculosis Division, State Serum Institute, Copenhagen, Denmark (*Chairman*)

Co-opted members :

Dr J. Bretey, Chef du Service de la Tuberculose à l'Institut Pasteur, Paris, France (Member of the Tuberculin Testing and BCG Vaccination Panel, WHO)
Dr F. R. G. Heaf, Adviser in Tuberculosis, Ministry of Health (England and Wales) and Department of Health for Scotland, London, United Kingdom (Member of the Tuberculin Testing and BCG Vaccination Panel, WHO)

Secretary :

Dr J. B. McDougall, Chief, Tuberculosis Section, WHO

FIG. 5. EXPERT COMMITTEE ON TUBERCULOSIS, FOURTH SESSION

Front row, left to right : Dr M. S. Abaza Bey ; Dr P. M. D'Arcy Hart ; Dr H. E. Hilleboe
Back row, left to right : Dr I. Gonda ; Dr P. V. Benjamin ; Dr J. I. Baldó ; Dr E. Bernard ;
Dr J. B. McDougall (WHO) ; Dr J. H. Holm (Chairman)

to enable their holders to attend these staff training courses ; study abroad should be reserved for older Fellows already having professional experience.

Demonstration Teams

The teams sent by WHO should work in close co-operation with these suggested training centres. In the opinion of the committee, it will be necessary to send at least one demonstration team to each region during coming years and, if possible, during 1949/50.

Hospital Buildings

Certain countries have not the necessary resources for the construction of spacious buildings, equipped according to modern techniques, for the hospitalization of tuberculous patients. However, as stressed in preceding

reports, this is precisely one of the essential elements in the success of the campaign. With the aim of permitting these States to obtain, under advantageous conditions, facilities for the isolation and treatment of patients, WHO contacted a certain number of firms in different countries asking them to submit plans and estimates for the supply of portable wooden or metal buildings which could be easily transported by land or water. Each of these buildings would be designed to provide at least 20 beds ; they would include premises for laboratory examinations and, in certain cases, quarters for the nursing personnel. The Secretariat has received numerous projects which have been examined by the committee. A report on this subject will appear later.

Relations with Other Organizations

In view of the large amount of work to be accomplished in many countries, the co-ordination of all activities appears necessary, whether those of inter-governmental institutions such as WHO and the Joint Enterprise (UNICEF, the Danish Red Cross and its Scandinavian associates, with the technical help of WHO), or of voluntary non-governmental organizations, such as the International Union against Tuberculosis, and the League of Red Cross Societies, which includes 68 national branches. The last two organizations have expressed the wish to work in conjunction with WHO ; their representatives explained their respective plans and programmes to the committee. The committee thanked these organizations for their offers of collaboration; it also recommended that WHO, through its field staff, should encourage the establishment of voluntary antituberculosis associations in countries where they do not so far exist, as well as their affiliation to the International Union against Tuberculosis.

As regards the Joint Enterprise, the committee felt that the needs of many countries were so great that its action should be extended to those sectors of tuberculosis control where WHO, because of lack of funds and personnel, cannot operate.

In order to co-ordinate these different activities and to make the best use of the resources at the disposal of the four organizations mentioned, the committee proposed that representatives of each of them should meet from time to time in order to discuss problems of common interest.

WHO Tuberculosis Research Office

The work in progress and the lines which it is following were explained to the committee by the Director of the Office. Some of this information communicated to the Joint Committee on Health Policy, UNICEF/WHO, has been published in a previous number of the *Chronicle*.[3]

[3] *Chron. World Hlth Org.* 1949, 3, 77

The vaccination campaign undertaken by the Joint Enterprise is developing rapidly ; at the end of May 1949, 13,000,000 persons had been tested with tuberculin and 6,000,000 had been vaccinated in Austria, Czechoslovakia, Finland, Greece, Hungary, Italy, Poland and Yugoslavia. The campaign has also started in Ceylon, India and North Africa ; plans are ready for its extension to Pakistan and the Middle East, and it is probable that it will soon start in the Far East and in Latin America.

The first statistical results of the vaccination campaign in Poland were laid before the committee. These data, which relate to provinces where the campaign has been completed, show the number and sex of persons tuberculin tested, the percentage, according to sex and age, of persons giving a positive reaction, and the total number of persons vaccinated. At the end of May 1949, more than 3,700,000 persons had undergone the tuberculin test and more than 1,700,000 had been vaccinated. Thanks to the co-operation of both the Polish and Scandinavian staff, schoolchildren readily lent themselves as subjects for vaccination. In one province they represented 62% of the total number undergoing the tuberculin test. It was observed that the percentage of children giving a positive reaction increased with age, as follows : 30% at 7 years of age, 40% at 10 years of age and 65% at 15 years of age.

The information on tuberculin sensitivity which has now been collected in many countries and in areas which are widely separated from one another will be of great value from the epidemiological point of view. It will permit detailed comparison of the degrees of tuberculin sensitivity according to countries and to the various regions of the same country. In countries where morbidity and mortality statistics are non-existent, these data will be the only ones from which an idea of the prevalence of tuberculosis can be obtained and, consequently, they will be very useful in the drawing-up of tuberculosis-control programmes.

The committee approved the programme of the WHO Tuberculosis Research Office and suggested that the terms of reference of this office should be enlarged to include all public-health aspects of tuberculosis, particularly those in which WHO has commitments ; it expressed the wish that the office should be in contact with the national organizations dealing with the same subjects, that it should seek to stimulate their research and, finally, that it might train workers in the epidemiology of tuberculosis.

Other Matters

The question of attaching a tuberculosis specialist to each regional organization, which was submitted to the Second World Health Assembly and to the Executive Board,[4] was examined by the committee which repeated its recommendations to this effect.

[4] *Chron. World Hlth Org.* 1949, **3**, 190

The committee again stressed the dangers presented by an unduly large distribution and indiscriminate use of streptomycin, as well as by the development of resistant strains of bacilli resulting therefrom. It also took note of a letter on this subject sent by WHO to the governments in April 1949.

The committee examined the observations of the Executive Board with regard to the report on the third session of the Expert Committee on Tuberculosis and, after having reconsidered the document, revised certain parts of the annex relating to " Suggestions for the Control of Tuberculosis in Countries with Undeveloped Programmes ".[5]

[5] *Off. Rec. World Hlth Org.* 15, 16 ; *Chron. World Hlth Org.* 1948, 2, 239

MALARIA

The report on the third session of the Expert Committee on Malaria[1]*—held in Geneva from 10 to 17 August 1949—which will be published after approval by the Executive Board, deals with various topical aspects of the malaria problem, including : malaria in underdeveloped countries, antimalarial drugs, the use of insecticides, and the activities of WHO with regard to malaria. The following pages give a survey of the work of this session and information on some of the subjects on the agenda.*

Antimalarial Drugs

The chemotherapy of malaria, which up to recent years played an important part in the control of this disease, has been relegated to second place by the discovery of insecticides with a residual effect. Even if chemotherapy is now only an auxiliary means of defence, however, it still retains its importance as an emergency measure in the event of epidemics. Furthermore, in countries where insect control is not yet organized it is often

[1] The following were present at this session :

Members :

Colonel M. K. Afridi, Director, Malaria Institute of Pakistan and Bureau of Laboratories, Karachi, Pakistan

Major-General Sir Gordon Covell, Adviser on Malaria, Ministry of Health ; Director, Malaria Laboratory, Horton Hospital, Epsom, Surrey, United Kingdom (*Vice-Chairman*)

Dr A. Gabaldón, Chief, Division of Malariology, Ministry of Health and Social Welfare, Maracay, Venezuela

Dr P. F. Russell, Malaria Adviser, International Health Division, Rockefeller Foundation, New York, USA (*Chairman*)

Lieutenant-Colonel J. Singh, Director, Malaria Institute of India ; Additional Deputy Director-General of Health Services, New Delhi, India

Professor N. H. Swellengrebel, Director, Institute for Tropical Hygiene, Amsterdam, Netherlands

[*Continued on p. 257*]

necessary to resort to chemotherapeutic agents for the rapid treatment of a large number of patients.

The results obtained with synthetic drugs during and after the war have been conclusive enough to enable the committee to give, in the course of the second session,[2] details suitable for the purposes of physicians in all countries concerning the action and dosage of the most important of these substances, including mepacrine (atabrine), proguanil (paludrine), chloroquine, pamaquine (plasmoquine), and many of their derivatives. Recent research and experimental work has led the committee, during the third session, to develop and define more closely some of its former conclusions, as well as presenting new ones.

Treatments employing, on the one hand, quinine and, on the other hand, the new synthetic drugs, particularly mepacrine, have shown that quinine is less active than these drugs and may be advantageously replaced by some of them. In a general way, as stressed by the committee, none of the antimalarial drugs known today satisfies the requirements for an ideal drug, which should be both a causal prophylactic against all species of malarial haematozoa and a good therapeutic agent, making possible not only the clinical cure of the disease but also the radical cure of the infection.[3] Furthermore, it should be either nontoxic or only slightly so, readily available, and moderate in price.

The committee felt obliged to emphasize, furthermore, that it is not sufficient to formulate general rules for the use of these drugs, since their activity may be modified by different factors, such as the sensitivity of the different strains of parasites and the degree of immunity of the population. The cost is also important in the choice of drugs intended for mass chemotherapy. The problem of the regional production of drugs is closely linked with this question. The committee felt it desirable that such production should be encouraged and that, through the intermediary of the

[*Continued from p. 256*]

Médecin-Général Inspecteur M. A. Vaucel, Directeur du Service de Santé colonial, Ministère de la France d'Outre-Mer, Paris, France

Dr D. B. Wilson, Director, East African Malaria Unit, Muheza, Tanganyika

Co-opted members :

Dr G. R. Coatney, Chief, Section of Chemotherapy of Protozoological Diseases, Microbiological Institute, National Institutes of Health (US Public Health Service), Bethesda, Md., USA

Professor G. Macdonald, Director, Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine, United Kingdom

Professor A. Missiroli, Chief, Parasitology Department, Istituto Superiore di Sanità, Rome, Italy

FAO representative :

F. L. McDougall, Counsellor

Secretary :

Dr E. J. Pampana, Chief, Malaria Section, WHO

[2] *Chron. World Hlth Org.* 1948, **2**, 147

[3] The definitions of some of the terms used in this article are as follows :

Suppressive treatment : the administration of drugs with the aim of suppressing the clinical symptoms of malaria without preventing the infection.

Causal prophylaxis : the administration of drugs with the aim of preventing the infection of the erythrocytes by malarial parasites. It involves an action of the drug either on the sporozoites or on the pre-erythrocytic stages of the haematozoon.

Clinical cure : the cure of the clinical symptoms but not necessarily of the infection.

Radical cure : the eradication of the infection, i.e., at any rate the absence of subsequent relapses, either clinical or parasitic. — ED.

international economic agencies, WHO should make an inquiry into the possibilities of manufacture on a regional scale. These possibilities would clearly depend on the availability of raw materials and on local technical factors.

In the light of recent experience it seems preferable to provide for the manufacture of synthetic drugs rather than to develop the cultivation of cinchona, which would take up acreage which could be employed for other purposes. Generally speaking, it seems that quinine will be gradually replaced by the synthetic drugs which, as will be shown, have many advantages over it.

Quinine. Quinine is usually thought of as being closely connected with the treatment of malaria and consequently the drug still retains a high reputation, though the new synthetic compounds are unquestionably more active. Moreover, a marked reduction in the incidence of blackwater

FIG. 6. EXPERT COMMITTEE ON MALARIA, THIRD SESSION - I

fever was recorded on replacing quinine by mepacrine in the prophylaxis and treatment of falciparum malaria among British troops stationed in West Africa during the second World War.

Mepacrine (*atabrine*). Mepacrine, which was employed as a substitute for quinine, has shown itself to be an excellent antimalarial. The drug settles in the tissues, which gradually liberate it into the blood-plasma, and its effectiveness is a function of its concentration in the plasma. These facts led to the adoption of a regimen of large loading doses during the

first day, or first two days, of therapy to obtain prompt action. Owing to the slow release of mepacrine from the tissues into the plasma, a sufficient concentration is maintained long enough to ensure a suppressive effect and to delay relapses from five to seven weeks. On the other hand, mepacrine has no causal prophylactic effect. Its main advantages over quinine are that it can be rapidly manufactured in large quantities, that it is a very effective therapeutic and suppressive agent, and that, because of its slow elimination, its use increases the intervals between relapses in benign tertian, and probably also in quartan, malaria.

Chloroquine and other 4-aminoquinolines. Chloroquine has advantages which, from the clinical viewpoint, are even greater than those of mepacrine. Like the latter, it settles in the tissues, which liberate it slowly into the blood, where it maintains a sufficient concentration to delay relapses even longer than does mepacrine. It makes clinical cure possible after very brief treatment, which in certain cases may even be limited to the administration of a single dose, and generally results in the radical cure of falciparum infections. As a suppressant, administered once weekly, it has an action superior to that of the other antimalarials against all strains of malaria parasites studied so far. On the other hand, it has the disadvantage of having a smaller margin of safety than that of proguanil and of being rather expensive. The other 4-aminoquinolines (sontochin and oxychloroquine, for example) do not appear to be superior to chloroquine.

Proguanil (paludrine). The exceptional properties of proguanil led to its being originally considered as the ideal antimalarial. Subsequently, however, it was found that it had certain defects capable of seriously limiting its use. It is definitely superior to all other antimalarial drugs thanks to the wide range separating the minimum effective dose from the maximum tolerated dose. Thus, doses of 6 to 12 mg. daily of proguanil (base) have been found effective, while 1.4 g. of proguanil per day have been given for 28 days without ill effects. Unlike quinine, mepacrine, and chloroquine, proguanil exerts a causal prophylactic action against *P. falciparum.* It can be employed as a therapeutic agent against all forms of malaria, but its action is less rapid than that of the drugs previously mentioned, and it is not suitable for the emergency treatment of severe cases. Furthermore, certain strains of *P. falciparum* have shown themselves resistant to the drug. This could probably be overcome by reinforcing proguanil with mepacrine at the commencement of treatment.

Pamaquin (plasmoquin) and other 8-aminoquinolines. The compounds which have just been described are drugs which have only an alleviative or suppressive effect in the case of vivax infections and cannot ensure radical cure. On the other hand, the 8-aminoquinolines have the advantage, when associated with quinine, of ensuring the radical cure of these infections. This fact is of great importance in the case of patients who are not likely

to be re-exposed to infection. The 8-aminoquinolines are also distinguished from the other groups of antimalarial drugs by another property, namely that they are capable of producing causal prophylaxis against all forms of malaria and are excellent gametocides. However, they are hardly of practical value in either of these fields, since their causal prophylactic effect does not appear except in dosages which are too close to the toxic level and their gametocidal properties do not materially affect the transmission of malaria within a community. The various compounds within the group differ from one another in their degree of toxicity, pamaquin being the most toxic, followed by pentaquine and isopentaquine, in that order.

Indications

From the point of view of the chemotherapeutic treatment of malaria, the following indications may be given for the drugs discussed above :

Treatment of a clinical attack. Quinine, mepacrine, chloroquine (and the other 4-aminoquinolines), or proguanil when given in suitable doses will nearly always overcome acute attacks of malaria. The choice and dosage of drug depend on various factors such as : rapidity of action, side-effects, length of treatment, nature of the relapse pattern in vivax infections, natural or acquired strain-resistance, the degree of immunity of the population, cost of the drug, and quantity available. Chloroquine and proguanil satisfy these various requirements best and may be considered as the drugs of choice for routine therapy, but proguanil is not to be recommended for emergency use in serious cases.

Treatment for the radical cure of vivax malaria. In relapsing vivax malaria, concurrent treatment with quinine and an 8-aminoquinoline offers an excellent chance of radical cure. The same results may be obtained by the prolonged administration of weekly doses of proguanil, using the dosage specified for suppressive treatment.

Suppressive treatment. When given at appropriate intervals, all the preceding drugs, with the exception of the 8-aminoquinolines, will keep malaria latent under normal conditions of exposure or following treatment of an acute attack. Chloroquine and proguanil have proved effective suppressants in the majority of countries and are the most convenient to use because of their large margin of safety. Quinine is the least effective drug.[4]

The committee proposed that some of these drugs be included in the *Pharmacopoeia Internationalis.*

Field and hospital trials of suppressive treatment. The committee felt that WHO should concentrate its efforts in this matter towards stimulating

[4] Details concerning the dosages of these various drugs are given in the report of the committee.

and co-ordinating therapeutic experiments with antimalarials in different institutions and in different countries, rather than undertake such experiments on its own initiative. However, WHO should offer its good offices for the direction of these trials and inquiries so that the results obtained in different countries will be comparable. The results of these investigations should be sent by the institutions direct to WHO, which will be responsible for analysing them.[5]

Control of the Adult Insects versus Eradication of the Vector-Species

The eradication, i.e., the absolute elimination, of the vector-species of malaria, which is in process of realization in Sardinia and Cyprus, has given rise to the hope that this radical form of malaria control might come into general use. The committee discussed this question in detail and examined, for the health authorities, the respective merits of the two methods : on the one hand, the control of anophelines by insecticides with a residual action, and on the other, the eradication, within a given area, of malaria-carrying species of mosquito, a method essentially involving larval control. While fully realizing the considerable advantages obtained by the eradication of the vector-species, the committee drew the attention of the authorities concerned to the fact that the success of measures with this aim depends on a number of factors : the presence or absence of natural barriers, e.g., mountains, which might impede the reintroduction of anophelines ; local topography, which may be favourable or otherwise for the formation of breeding-places ; and the economic state of the country. This last point is important since eradication is costly ; it may entail clearing and drainage and must be undertaken over the whole of a territory, which necessitates detailed organization and qualified personnel. Furthermore, preliminary investigation of the habits of the vector-species is necessary, in order that the campaign may be rationally conducted. In addition, when an area is freed from certain species of mosquito, a vigilant watch must be kept to prevent their reintroduction.

Malaria control by the spraying of residual insecticides has the advantage of stopping the transmission of malaria in a simple and direct way. It may be limited to houses and shelters in malarious areas and does not entail a preliminary study of the bionomics of the parasites. Spraying with insecticides has the secondary effect of destroying other harmful insects. Finally, from the administrative viewpoint, control by means of insecticides may be decentralized to a large extent, although it would appear desirable for it to be organized on a countrywide scale. This method gives rapid results and, in particular, makes it possible to prevent an epidemic or to check its spread.

[5] Details of the organization of these investigations are given in the report of the committee.

The advantages and disadvantages of the two methods should be taken into consideration by authorities who wish to draw up a malaria-control programme. In stressing this fact, the committee recommended

FIG. 7. EXPERT COMMITTEE ON MALARIA, THIRD SESSION - II

Left to right : Major-General Sir Gordon Covell (Vice-Chairman) ; Dr P. F. Russell (Chairman) ; Dr E. J. Pampana (WHO)

that neither of the methods in question be applied over the whole of a territory without preliminary trials in a limited area in order to estimate the chances of success and the cost involved.

Measures against the Reintroduction of Anophelines

The question of the measures to be taken in order to prevent the reintroduction of anophelines into areas which have either been freed from them, or are naturally free from vector-species, was already broached by the committee during its second session [6] and was subsequently examined in detail by the Expert Committee on Insecticides.[7] Whatever measures may be prescribed for the disinsectization of ships and aircraft, rigid control of anophelines should be carried out in the immediate neighbourhood of sea- and airports, with the especial object of eliminating all potential breeding-places for accidentally imported mosquitos. The Expert Committee on Malaria considers that this is the best safeguard against the reintroduction of anophelines.

---

[6] *Off. Rec. World Hlth Org.* **11**, 56 ; *Chron. World Hlth Org.* 1948, **2**, 151
[7] *Chron. World Hlth Org.* 1949, **3**, 156

Collaboration of WHO with Other Organizations

The committee noted with satisfaction the resolutions of the Second World Health Assembly concerning activities undertaken jointly with other international organizations in malaria control. The United Nations Economic and Social Council has adopted resolutions aiming at making it easier for non-producing countries to acquire insecticides and antimalarial materials ; the United Nations International Children's Emergency Fund (UNICEF) is carrying out antimalarial campaigns in East Asia with the co-operation of WHO and of the various governments ; the Food and Agriculture Organization (FAO) is collaborating in a joint project whose long-term consequences will be of the utmost importance.

Joint FAO/WHO project. The project for joint FAO/WHO co-operation for combating malaria and increasing the production of foodstuffs in areas selected for this purpose was discussed by the committee at its second session and approved by the Second World Health Assembly.[8] After again considering the matter during its third session, the committee suggested that lists of areas complying with the requisite conditions be drawn up, by both FAO and WHO, that these lists be combined, and that a maximum of three areas, of a size suitable to the aim in view, be finally selected. The committee further proposed that the governments make known, through the regional offices of WHO, the areas in which they would be prepared to collaborate in the joint work. The FAO representative expressed the view that priority should be given to areas in Latin America, the Near East, and Asia.

Draft Recommendations to Governments

The First Health Assembly formulated recommendations to be sent to the governments of Member States on the legislative and technical measures necessitated by the control of tuberculosis and venereal diseases, as well as by maternal and child health.[9] The recommendations concerning malaria, one of the four subjects given priority by WHO, had been deferred in view of the complexity of the technical problems, particularly of those relating to a choice between control of adult mosquitos and larvicidal methods ; the Assembly had entrusted the Executive Board with the task of formulating them. The latter referred the question to the Expert Committee on Malaria, which, after examining it during its third session, has drawn up a draft for submission to the Executive Board.

---

[8] *Chron. World Hlth Org.* 1949, 3, 175
[9] *Off. Rec. World Hlth Org.* 13, 301 ; *Chron. World Hlth Org.* 1948, 2, 194

BIOLOGICAL UNIT OF ACTIVITY

Its Status and Scope

The concept of a biological unit arose from the need to measure and find some means of expressing the activity of biological substances, such as sera, vitamins, hormones and antibiotics, whose chemical constitution was not precisely known or which were heterogeneous in nature so that no constant relation between weight and activity could be established.

The concept was first applied by Ehrlich at the end of the last century to the standardization of diphtheria antitoxin, and since then standard units have been set up for many biological substances. The task of fixing internationally recognized units of activity by the critical comparison of results obtained in laboratories in various countries was first carried out by the Permanent Commission on Biological Standardization of the League of Nations Health Organization, and today this work is being performed by the Expert Committee on Biological Standardization of the World Health Organization. During the last twenty-five years, units have been defined and standards established in this way for more than thirty substances, including sera—antidiphtheria and antitetanus among others—tuberculin, digitalis, ouabain, insulin, the arsenobenzenes, certain hormones, certain vitamins, heparin, penicillin and streptomycin.

A critical study of the concept of biological units and of certain problems at present arising in their use is given in an article by Dr A. A. Miles, Director of the Department of Biological Standards of the National Institute for Medical Research, London, and a member of the WHO Expert Committee on Biological Standardization, in the *Bulletin of the World Health Organization*.[1] After recalling the stages which led to the setting-up of the first unit, that for diphtheria antitoxin, now a classical example, the author examines the value of the " animal-unit ", a term frequently and incorrectly used instead of the expression " the range of minimal effective doses in a given animal ". It is, in fact, impossible by comparing the reactions of living organisms to the injection of active substances to obtain results sufficiently constant and lying between narrow enough limits to serve as a basis for setting up internationally recognized units. The use of the term " animal-units ", which is even frequently abridged to " unit " without indicating the species of animal used, should be abandoned.

After considering the conditions which should be satisfied by the concept of a unit, if the latter is to be valid, Dr Miles next considers the question of heterogeneous standards, and the last part of his article is devoted to a study of the problems involved in discarding the unit notation when biological substances, originally of a crude or heterogeneous nature, have been finally purified and characterized by the chemist and physicist.

[1] *Bull. World Hlth Org.* 1949, **2**, 205

This is the case with vitamin C and vitamin B_1, whose chemical constitution is now known and which are easy to assay without the need for biological tests.

With other substances, however, there is a borderline stage where the standard is no longer necessary, in the sense that it is theoretically possible to predict biological activity from the results of a chemical examination, but where the standard is retained because biological assay is cheaper and easier. In such cases, there may be some advantage in designating potency not in units, but in weight-equivalents. This weight-equivalent method has been adopted in the USA for preparations of streptomycin, while in the United Kingdom, on the other hand, the unit notation for this substance is retained. The author discusses this example, explaining why in the United Kingdom the unit notation is preferred. In his opinion, the expression of activity by the weight-equivalent method can be of real value only if the standard preparation is pure and homogeneous and if it can be assumed that all subsequent standards intended to replace the master standard will be of the same degree of purity.

As regards streptomycin, the problem of the relative values of the unit and the weight-equivalent is not only of purely practical interest. A question of principle, which may have important consequences, is involved. A national or international standard is an essential part of official definitions in pharmacopoeias and government regulations which are either law or are used as a basis for legal proceedings and commercial transactions. It is therefore important to make sure that the official unit is precisely defined so as to avoid any confusion or misunderstanding. For example, to the organic chemist, " streptomycin " is a base with a structural formula corresponding to N-methyl-*l*-glucosaminido-streptosido-streptidine. This is not the " streptomycin " of the pharmacopoeia which means " each of several antibiotic substances produced by the growth of *Streptomyces griseus* " : that is to say, that the different substances all bearing this name are far from being identical and that, weight by weight, they will not have the same biological activity. The concept of a unit, on the other hand, refers to the activity of a standard preparation and not to a hypothetical pure substance.

The importance of the problems inherent in a premature discarding of the unit system is therefore evident. There can be no doubt that such problems will frequently arise in the future as more and more substances with biological activity are first chemically defined and then synthesized. According to Dr Miles, unit notation will become superfluous only when biological assay ceases to be indispensable for the specification of materials prepared routinely and when chemical and physical tests alone are sufficient to predict biological activity.

THE TUBERCLE BACILLUS

In April 1949 Professor P. Hauduroy, Director of the Institut d'Hygiène et de Bactériologie de l'Université de Lausanne, organized a series of seven lectures at Lausanne (Switzerland) in which specialists dealt with a variety of questions concerning the tubercle bacillus. These lectures have now been summarized in the *Bulletin of the World Health Organization.*[1]

Professor K. A. Jensen (Copenhagen) dealt with the human and bovine types of tubercle bacillus. He stressed the difficulty of classifying as one or other of these types certain strains with atypical characteristics, and mentioned certain cases in which the passage from one type to another had been observed. In his opinion, the explanation of such lability was to be found in the antigenic structure of these bacilli.

In his lecture on the murine type of tubercle bacillus, Dr A. Q. Wells (Oxford) recalled his discovery of the tubercle bacillus infecting the field-vole ; then, after describing the bacteriological and biochemical characteristics of this bacillus, he visualized the possibility of its application for the vaccination of man and of cattle.

The paratubercle bacilli were dealt with by Professor G. Penso (Rome), who has tried to find criteria for the classification of the mycobacteria ; such criteria, he has found, may be provided by certain special properties such as an optimum temperature for growth, the utilization of carbohydrates, and the action of phages. These have enabled him to outline a classification scheme for the paratubercle bacilli.

After the general study of the various types of tubercle and paratubercle bacilli, the staining properties of these bacilli and their chemical constitution were considered. Professor P. Hauduroy (Lausanne), taking as his subject " The acid-alcohol resistance of tubercle and paratubercle bacilli ", discussed the various hypotheses advanced in explanation of this peculiarity in staining. He summarized studies made on the permanence of this property in the various types of bacilli, as well as recent advances in the method of staining.

The biological activity of substances extracted from the tubercle bacillus was reviewed very thoroughly by E. B. Chain, M.A., Ph.D. (Oxford), who dealt in succession with the three groups of substances—lipids, polysaccharides and proteins—which have so far been extracted from the tubercle bacillus.

Two lectures were devoted to the question of substances inhibiting the growth of the tubercle bacilli. The first, entitled " Antibiotics acting on tubercle bacilli ", was given by Sir Howard Florey (Oxford), who enumerated and discussed those substances extracted from fungi and bacteria, some of which are still under investigation, which have been tried

[1] *Bull. World Hlth Org.* 1949 **2**, 299

in the treatment of experimental and clinical tuberculosis. The second lecture, bearing the title " The chemotherapeutic agents active against tubercle bacilli ", was given by Professor J. Tréfouël (Paris), who described the results obtained in the treatment of experimental and clinical tuberculosis with sulfones and with *p*-aminosalicylic acid (PAS), as well as the future possibilities of treatment opened up by combinations of these drugs, such as sulfones-streptomycin or PAS-streptomycin.

Notes and News

WHO Survey on Endemic Goitre

A survey is now being made by WHO of the prevalence of endemic goitre throughout the world and of the measures taken by various countries to reduce the incidence of the disease.

It is known that in many countries where endemic goitre is prevalent, the authorities, either national or local, have introduced legislation making it compulsory for iodine to be added to some staple foodstuff, such as salt. In other countries the authorities have thought it sufficient to conduct publicity campaigns urging the population to use foodstuffs to which iodine has been added.

It is of immediate practical importance to know how effective the various procedures in force have been, and the Director-General of WHO has sent a circular letter to all Member States, asking for recent information on this and other aspects of the problem.

World Health Day

On the proposal of the Iranian delegation, the First World Health Assembly resolved that a Health Day should be observed throughout the world in order to remind every individual of the part he himself must play if the objectives of the World Health Organization are to be realized. World Health Day was celebrated for the first time on 22 July 1949, by more than 30 countries. An attempt was made, more particularly through the media of press, radio and film, to awaken the interest of the general public in present possibilities of attaining the highest possible standard of health for every human being, and the results already achieved by WHO towards this end. To mention only a few of the activities organized for World Health Day : exhibitions illustrative of international health work were presented in Burma and the Lebanon ; a commemorative postage stamp was issued in Haiti ; government authorities in Finland held a reception for welfare workers ; health officials throughout France took part in special functions ; and a mass rally took place in Vienna.

These activities were directed towards the population as a whole, but it is hoped that in the future a greater effort will be made to arouse the interest of youth by encouraging schools and other educational institutions to act as focal points for the observance of World Health Day. As 22 July falls within the normal vacation period, the Second Health Assembly resolved upon an alteration of date for future years. In 1949, World Health Day commemorated the signing of the Constitution of WHO by 61 States at

the close of the International Health Conference in 1946. From 1950 onwards it will be observed on 7 April—the date upon which that Constitution officially entered into force in 1948.

Seminar on World Health

An international " Seminar on World Health ", arranged by the World Federation of United Nations Associations (WFUNA)—an organization which has entered into official relationship with the World Health Organization—took place in Rome during the latter half of the Second World Health Assembly. Twenty-seven medical students and young doctors from nine countries attended. In most cases, expenses were met by the participants themselves, though a minority travelled on government grants, while over 50 applicants were unable to attend owing to lack of funds.

The programme of the seminar was arranged so as to allow participants to attend plenary and committee meetings of the Health Assembly. Thus an opportunity was provided for these young medical men not only to become acquainted with the purposes of WHO and the details of its programme, but also to gain some understanding of the practical problems with which the Organization is faced in carrying out its aims.

The lecture programme, with specialists prominent in the medical and public-health world at the rostrum, included : " The Fight against Tuberculosis " by Dr J. Holm, of the State Serum Institute, Copenhagen ; " Heart Diseases " by Dr V. Puddu, of the Cardiac Disease Centre, Rome ; " Science, Medicine and Unesco " by Dr Irina M. Zhukova, of UNESCO ; " Economic Development and Health Problems " by Dr H. van Zile Hyde, of the US Public Health Service ; " New Perspectives in Public Health " by Dr A. Stampar, President of the Yugoslav Academy of Sciences and Arts ; " Work of the Institut Pasteur " by Professor A. R. Dujarric de la Rivière, Sous-Directeur de l'Institut Pasteur, Paris ; and " Problems of Mental Health " by Dr R. H. Felix, of the US Public Health Service. Addresses on health problems were also delivered by various other personalities attending the Health Assembly. From these lectures, and the discussions which followed them, the participants were able to gain a conception of public health on a worldwide scale ; from conversations with delegates, many of whom share personally in the medical programmes sponsored by WHO, and with observers from specialized non-governmental organizations, they were able to obtain first-hand information on scientific developments in all parts of the world.

BULLETIN OF THE WORLD HEALTH ORGANIZATION

(Separate editions in English and in French)

Vol. 2, No. 2, to be published shortly, will include the following articles :

Disinsectization of aircraft — *J. Duguet*

On pethidine and methadone derivatives — *P. O. Wolff*

The biological unit of activity : its status and scope — *A. A. Miles*

Nomenclature of the Rhesus typing sera — *J. J. van Loghem*

Observations on the serodiagnosis of syphilis — *J. F. Mahoney & Margaret R. Zwally*

Rapid treatment of syphilis with penicillin : I. A survey of the problem — *E. W. Thomas*

Rapid treatment of syphilis with penicillin : II. Penicillin in prenatal and infantile syphilis — *E. W. Thomas*

Rickettsioses in equatorial Africa — *M. Gaud*

Distribution of wild-rodent plague — *P. C. C. Garnham*

Medical aspects of the causes and prevention of crime and the treatment of offenders — *M. S. Guttmacher*

Notes on the health-personnel training programme of the Anglo-Egyptian Sudan — *D. A. Messinezy*

Price : 7/6 $1.50

SUPPLEMENT 1

Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death : Sixth Revision of the International Lists of Diseases and Causes of Death

Volume 1 — now available

Volume 2—alphabetical index—available shortly

Price per set : 30/- $6.00

CHRONICLE OF THE WORLD HEALTH ORGANIZATION

(Published monthly in English, French, Spanish, Chinese and Russian)

The *Chronicle* contains general information on the Organization, its principal activities, and the meetings of its expert committees, and summaries of its main technical publications.

Subscription for 1949 . . . . . 10/- $2.00

Price per single copy 1/- $0.20

A specimen number is sent free of charge on request.

Subscription to all publications of the World Health Organization for 1949
£4 15s $19

Public Library
Detroit, Mich.

WHO publications are on sale at the following addresses :

ARGENTINA
Editorial Sudamericana, S. A.
Calle Alsina 500
BUENOS AIRES

AUSTRALIA
H. A. Goddard Pty, Ltd
255*a* George Street
SYDNEY

BELGIUM
Agence et Messageries de la Presse, S. A.
14-22 rue du Persil
BRUSSELS

BOLIVIA
Librería Científica y Literaria
Avenida 16 de Julio 216
Casilla 972
LA PAZ

CANADA
The Ryerson Press
299 Queen Street West
TORONTO, Ontario

CHILE
Edmundo Pizarro
Merced 846
SANTIAGO

CHINA
The Commercial Press, Ltd
211 Honan Road
SHANGHAI

COLOMBIA
Librería Latina, Ltda
Apartado Aéreo 4011
BOGOTÁ

COSTA RICA
Trejos Hermanos
Apartado 1313
SAN JOSÉ

CUBA
La Casa Belga
René de Smedt
O'Reilly 455
HAVANA

CZECHOSLOVAKIA
Librairie F. Topič
Národní Třída 9
PRAGUE I

DENMARK
Librairie internationale
Einar Munksgaard
Nørregade 6
COPENHAGEN

DOMINICAN REPUBLIC
Librería Dominicana
Calle Mercedes 49, Apartado 656
CIUDAD TRUJILLO

ECUADOR
Muñoz Hermanos y Cía
Nueve de Octubre 703
Casilla 10-24
GUAYAQUIL

EGYPT
Librairie "La Renaissance d'Egypte"
9 Sharia Adly Pasha
CAIRO

FINLAND
Akateeminen Kirjakauppa
Keskuskatu 2
HELSINKI

FRANCE
Editions A. Pedone
13 rue Soufflot
PARIS, 5e

GREECE
Librairie internationale
"Eleftheroudakis"
Place de la Constitution
ATHENS

GUATEMALA
Goubaud y Cía, Ltda, Sucesor
5a Av. Sur, Nº 6 y 9*a*, C.P.
GUATEMALA

HAITI
Max Bouchereau
Librairie "A la Caravelle"
Bolte postale 111-B
PORT-AU-PRINCE

INDIA
Oxford Book & Stationery Co.
Scindia House
NEW DELHI

IRAN
Bongahe Piaderow
731 Shah Avenue
TEHERAN

IRAQ
Mackenzie's Bookshop
BAGHDAD

LEBANON
Librairie Universelle
BEIRUT

LUXEMBURG
Librairie J. Schummer
Place Guillaume
LUXEMBURG

NETHERLANDS
N. V. Martinus Nijhoff's Boekhandel en Uitgevers Maatschappij
Lange Voorhout 9
THE HAGUE

NEW ZEALAND
The United Nations Association of New Zealand
1011 G.P.O.
WELLINGTON

NORWAY
Johan Grundt Tanum Forlag
Kr. Augustsgt. 7A
OSLO

PHILIPPINES
D. P. Pérez Co.
132 Riverside
SAN JUAN

SWEDEN
Aktiebolaget C. E. Fritzes Kungl. Hovbokhandel
Fredsgatan 2
STOCKHOLM 16

SWITZERLAND
Librairie Payot, S. A.
LAUSANNE, BALE, BERNE, GENEVA, MONTREUX, NEUCHATEL, VEVEY, ZÜRICH
Librairie Hans Raunhardt
Kirchgasse 17
ZÜRICH I

SYRIA
Librairie Universelle
DAMASCUS

TURKEY
Librairie Hachette
469 av. de l'Indépendance
ISTANBUL

UNION OF SOUTH AFRICA
The Central News Agency, Ltd
Cor. Commissioner & Rissik Str.
JOHANNESBURG, and at CAPETOWN and DURBAN

UNITED KINGDOM
H.M. Stationery Office
P.O. Box 569
LONDON S.E.1

UNITED STATES OF AMERICA
Columbia University Press
International Documents Service
2960 Broadway
NEW YORK 27, N.Y.

URUGUAY
Librería Internacional S.R.L.
Héctor D'Elía
Calle Uruguay 1331
MONTEVIDEO

VENEZUELA
Escritorio Pérez Machado
Conde a Piñango 11
CARACAS

YUGOSLAVIA
Državno Preduzeće Jugoslovenska Knjiga
Maršala Tita 23/II
BELGRADE

Orders may also be addressed to

WORLD HEALTH ORGANIZATION

Sales Section, Palais des Nations, Geneva, Switzerland